IN THE CLAIMS

1. (Previously Presented) A charged-particle beam exposure apparatus for exposing a member to be exposed to a charged particle beam with a pattern, comprising:

storage means for storing a plurality of data for controlling a dosage of the charged particle beam in accordance with an irradiation position of the charged particle beam on the member to be exposed, wherein the data depends on a parameter representing at least one of an underlayer condition of the member to be exposed, a resist material, a forward scattering radius, and a backward scattering radius, wherein the plurality of data are generated based on each different value of the parameter;

selection means for selecting any one of the plurality of data stored in said storage means; and

exposure means for controlling the dosage of the charged particle beam on the basis of the data selected by said selection means, thereby exposing the member to be exposed with the pattern.

2. (Previously Presented) The apparatus according to claim 1, wherein the data includes correction data for correcting influence of a proximity effect on reference dose data.

3. (Previously Presented) A charged-particle beam exposure apparatus

for exposing a member to be exposed to a charged particle beam with a pattern, comprising:

first storage means for storing reference dose data of the charged particle beam in accordance with an irradiation position of the charged particle beam on the member to be exposed;

second storage means for storing a plurality of control data for performing proximity effect correction in accordance with the irradiation position with respect to the reference dose data, wherein the control data depends on a parameter of a proximity effect correction calculation, the plurality of control data are generated based on each different parameter;

selection means for selecting one of the plurality of control data stored in said second storage means; and

exposure means for performing proximity effect correction for the reference dose data on the basis of the control data selected by said selection means, thereby exposing the member to be exposed with the pattern.

4. (Original) The apparatus according to claim 3, wherein the reference dose data includes data for defining bitmap data determined depending on a pattern to be exposed, or data for defining bitmap data and an irradiation time ratio.

5.-7. (Cancelled)

8. (Previously Presented) The apparatus according to claim 3, wherein the parameter includes at least one of an underlayer condition of the member to be exposed, a resist material, a forward scattering radius, and a backward scattering radius.

9. (Previously Presented) A control data determination method comprising:

a step of generating reference dose data in accordance with an irradiation position of a charged particle beam for exposing a member to be exposed with a reference pattern;

a generation step of generating a plurality of control data to the reference dose data, based on each different parameter of a proximity effect correction calculation;

a storage step of storing in a memory the plurality of generated control data;

a selection step of selecting any one of the plurality of control data that are stored in the memory;

an exposure step of performing proximity effect correction for the reference dose data on the basis of the selected control data, thereby exposing the member to be exposed with a pattern;

a determination step of evaluating the exposed pattern to determine whether the selected control data is proper data for controlling the reference dose data; and

a control data determination step of determining proper control data

for controlling the reference dose data in accordance with a determination result.

10. (Previously Presented) The method according to claim 9, wherein whether the selected control data is proper data for controlling the reference dose data is determined by comparing the exposed pattern with the reference pattern by a visual check.

11. (Previously Presented) The method according to claim 9, wherein whether the selected control data is proper data for controlling the reference dose data is determined by evaluation means for comparing the exposed pattern with the reference pattern.

12. (Previously Presented) The method according to claim 9, wherein the reference dose data includes data for defining bitmap data determined depending on a pattern to be exposed, or data for defining bitmap data and an irradiation time ratio.

13. (Cancelled)

14. (Previously Presented) The method according to claim 9, wherein the parameter includes at least one of an underlayer condition of the member to be exposed, a resist material, a forward scattering radius, and a backward scattering radius.

15. (Previously Presented) A charged-particle beam exposure method of

exposing a member to be exposed to a charged particle beam with a pattern, comprising:

a step of generating a plurality of data for controlling a dosage of the charged particle beam in accordance with an irradiation position of the charged particle beam on the member to be exposed, and storing the data in a memory, wherein the data depends on a parameter representing at least one of an underlayer condition of the member to be exposed, a resist material, a forward scattering radius, and a backward scattering radius, wherein the plurality of data are generated based on each different value of the parameter;

a selection step of selecting any one of the plurality of data stored in the memory; and

an exposure step of controlling the dosage of the charged particle beam on the basis of the data selected in the selection step, thereby exposing the member to be exposed with the pattern.

16. (Previously Presented) The method according to claim 15, wherein the data includes correction data for correcting influence of a proximity effect on reference dose data.

17. (Previously Presented) A charged-particle beam exposure method of exposing a member to be exposed to a charged particle beam with a pattern, comprising:

a step of generating reference dose data of the charged particle beam in accordance with an irradiation position of the charged particle beam on the member to

be exposed, and storing the reference dose data in a first memory;

a step of generating a plurality of control data to the reference dose data, based on each different parameter of a proximity effect correction calculation, and storing the generated plurality of control data in a second memory;

a selection step of selecting one of the plurality of control data stored in the second memory; and

an exposure step of performing proximity effect correction for the reference dose data on the basis of the control data selected in the selection step, thereby exposing the member to be exposed with the pattern.

18. (Previously Presented) The method according to claim 17, wherein the reference dose data includes data for defining bitmap data determined depending on a pattern to be exposed, or data for defining bitmap data and an irradiation time ratio.

19. (Cancelled)

20. (Previously Presented) The method according to claim 17, wherein the parameter includes at least one of an underlayer condition of the member to be exposed, a resist material, a forward scattering radius, and a backward scattering radius.

21. (Cancelled)

22. (Previously Presented) A device manufacturing method which uses for part of a manufacturing process a charged-particle beam exposure apparatus for performing proximity effect correction for a charged particle beam to expose a member to be exposed with a pattern, wherein the charged-particle beam exposure apparatus executes:

a step of generating a plurality of control data for controlling reference dose data of the charged particle beam in accordance with an irradiation position of the charged particle beam on the member to be exposed, and storing the control data in a memory, wherein the control data depends on a parameter representing at least one of an underlayer condition of the member to be exposed, a resist material, a forward scattering radius, and a backward scattering radius, wherein the plurality of control data are generated based on each different value of the parameter;

a selection step of selecting any one of the plurality of control data stored in the memory; and

an exposure step of controlling the reference dose data of the charged particle beam on the basis of the control data selected in the selection step, thereby exposing the member to be exposed with the pattern.

23. (Previously Presented) A device manufacturing method which uses for part of a manufacturing process a charged-particle beam exposure apparatus for performing proximity effect correction for a charged particle beam to expose a member to be exposed with a pattern, wherein the charged-particle beam exposure apparatus executes:

a step of generating reference dose data of the charged particle beam

in accordance with an irradiation position of the charged particle beam on the member to be exposed, and storing the reference dose data in a first memory;

a step of generating a plurality of control data to the reference dose data, based on each different parameter of a proximity effect correction calculation, and storing the generated plurality of control data in a second memory;

a selection step of selecting one of the plurality of control data stored in the second memory; and

an exposure step of performing proximity effect correction for the reference dose data on the basis of the control data selected in the selection step, thereby exposing the member to be exposed with the pattern.

24. (Previously Presented) The method according to claim 9, wherein the selection step performs a processing for selecting control data other than the selected control data until proper control data is determined based on the determination result.

25. (Currently Amended) An apparatus for irradiating a plurality of charged-particle beams to a sample, and forming a pattern on the sample, said apparatus comprising:

a memory for storing data for performing proximity effect correction; and

a first device for controlling individually irradiation to the sample of each of the charged-particle beams based on the data stored in said memory,

wherein the data depends on a parameter representing at least one of an underlayer condition of the sample to be exposed, a resist material, a forward scattering radius and a backward scattering radius, and wherein the data is generated based on each different value of the parameter.

26. - 27. (Cancelled)

28. (Currently Amended) A device manufacturing method comprising:

a step of forming a pattern on a sample with an apparatus for irradiating a plurality of charged-particle beams to [[a]] the sample, and forming the pattern on the sample[[,]]; and ~~wherein the apparatus comprises a memory for storing data for performing proximity effect correction, and a first device for controlling individually irradiation to the sample of each of the charged-particle beams based on the data; and~~

a step of developing the sample on which the pattern is formed[[.]],

wherein the apparatus comprises

a memory for storing data for performing proximity effect correction, and

a first device for controlling individually irradiation to the sample of each of the charged-particle beams based on the data stored in the memory,

wherein the data depends on a parameter representing at least one of an underlayer condition of the sample to be exposed, a resist material, a forward scattering radius and a backward scattering radius, and wherein the data is generated based on each

different value of the parameter.

29. (New) An apparatus for irradiating a plurality of charged-particle beams to a sample, and forming a pattern on the sample, said apparatus comprising:

a memory for storing data for performing proximity effect correction; and

a first device for controlling individually irradiation to the sample of each of the charged-particle beams based on the data stored in said memory,

wherein the data depends on a parameter of a proximity effect correction calculation, and the data is generated based on each different parameter.

30. (New) A device manufacturing method comprising:

a step of forming a pattern on a sample with an apparatus for irradiating a plurality of charged-particle beams to the sample, and forming the pattern on the sample; and

a step of developing the sample on which the pattern is formed,

wherein the apparatus comprises

a memory for storing data for performing proximity effect correction, and

a first device for controlling individually irradiation to the sample of each of the charged-particle beams based on the data stored in the memory, and

wherein the data depends on a parameter of a proximity effect

correction calculation, and the data is generated based on each different parameter.

31. (New) An apparatus for irradiating a plurality of charged-particle beams to a sample, and forming a pattern on the sample, said apparatus comprising:

a memory for storing data for performing proximity effect correction; and

a blanker array having a plurality of apertures two-dimensionally arrayed on a same plane located almost perpendicularly to a pass through direction of the plurality of charged-particle beams and a plurality of pairs of electrodes provided on both sides of each aperture,

wherein the plurality of pairs of electrodes individually deflect the plurality of charged-particle beams, and individually control irradiating of the plurality of charged-particle beams to the sample.

32. (New) A device manufacturing method comprising:

a step of forming a pattern on a sample with an apparatus for irradiating a plurality of charged-particle beams to the sample, and forming the pattern on the sample; and

a step of developing the sample on which the pattern is formed,

wherein the apparatus comprises

a memory for storing data for performing proximity effect correction, and

a blanker array having a plurality of apertures two-dimensionally

arrayed on a same plane located almost perpendicularly to a pass through direction of the plurality of charged-particle beams and a plurality of pairs of electrodes provided on both sides of each aperture,

wherein the plurality of pairs of electrodes individually deflect the plurality of charged-particle beams, and individually control irradiating of the plurality of charged-particle beams to the sample.